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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,394	09/11/2003	Tetsunori Kaji	500.41316VX1	3780

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ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-9889

EXAMINER

HASSANZADEH, PARVIZ

ART UNIT PAPER NUMBER

1763

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

CF

Office Action Summary	Application No. 10/659,394	Applicant(s) KAJI ET AL.	
	Examiner Parviz Hassanzadeh	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-8 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/090,759.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/11/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 7 is objected to because of the following informalities: in lines 12-13, it is suggested to delete the word “referencing” or “reference” as being redundant. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Le et al (US Patent No. 6,153,115).

Le et al teach a plasma process apparatus (Figs. 1A, 1B) including a spectroscopic endpoint detection device and method of using the same wherein the method comprising:

separating spectrally plasma radiation emitted from a vacuum process chamber 12 into component spectra; and converting said component spectra into a time series of analogue electric signals composed of different wavelength components at a predetermined period as shown in Fig. 2:

adding together analogue signals of the different wavelength components, converting a plurality of added signals into digital quantities on a predetermined-period basis; and digitally

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adding together said plurality of added and converted signals a plural number of times on a plural-signal basis as shown in Fig. 3;

determining discriminatively an end point of a predetermined plasma process on the basis of a signal resulting from said digital addition step; and terminating said predetermined plasma process (column 5, line 30 through column 8, line 65).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Saito et al (US Patent No. 6,586,262 B1) teach a method of determining an end point of a plasma process using an emission spectroscope (Fig. 1) wherein a plasma emission spectra (Fig. 2) over time is measured and the intensity of the total spectra as a function of time (Fig. 4) is monitored and a change in the intensity of the measured spectra is correlated with an endpoint of the process;


Smith, Jr. et al (US Patent No. 6,383,402 B1), *Yano et al (US Patent No. 6,414,499 B2)*, *Yao et al (US Patent No. 6,306,669 B1)*, and *Yi et al (US Patent Application Publication No. 2003/0085198 A1)* teach a plasma monitoring emission spectroscopic apparatus including a CCD array of receiving elements, wherein the analogue output of each receiving element is converted into a digital signal and sent to a signal processing unit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parviz Hassanzadeh whose telephone number is (571)272-1435. The examiner can normally be reached on Tuesday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571)272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Parviz Hassanzadeh
Primary Examiner
Art Unit 1763

May 20, 2004